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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,787	10/26/2001	Martin Lenfers	10191/2072	6062

26646 7590 07/31/2003

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5  
EXAMINER

TUNG, TA HSUNG

ART UNIT

PAPER NUMBER

1753

DATE MAILED: 07/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/016,787

Applicant(s)

LENPERS

Examiner

T. TUNG

Group Art Unit

1753

Paper No. 5

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1-12 is/are pending in the application.
- Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 1-12 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement

## Application Papers

- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☒ All ☐ Some\* ☐ None of the:
  - ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other \_\_\_\_\_

Office Action Summary

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Claims 3-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3 and 4, last line of each, “second pump electrode” is questioned. From parent claim 1, line 5, the second pump electrode faces the sample gas mixture and would thus be electrode 23. The barrier layer, as shown in figure 1, appears to prevent ionic conduction between the reference electrode 22a and the first pump electrode 20, not the second pump electrode 23.

Claim 5, lines 1-2, “the barrier has a cutout in a region between the first and second pump electrodes” is questioned. It is not evident what cutout in the barrier layer is being referred to here. The barrier layer 24 is level with the first pump electrode 20 and apparently has a cutout to accommodate that electrode. But, this cutout would appear not to be between the two pump electrodes. Incidentally, the barrier layer itself appears to be in a cutout or recess in solid electrolyte 52. Is this the cutout meant by applicant? Where is the supporting disclosure for claim 5 in the specification?

Claim 6 has the same problem as claim 5. What cutout in the barrier layer is meant by the “cutout” at line 2 of the claim?

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al 5,939,615 or Friese et al 5,314,604 in view of Mase et al 4,559,126 or Yamada 4,505,807.

Kato discloses a measuring gas chamber 6, an internal pump electrode 16 in this chamber, an external pump electrode 18 separated from the internal pump electrode by a first solid electrolyte 4a and cooperating with the internal pump electrode to form a pump cell, a reference gas chamber 10, a reference electrode 24 in the reference gas chamber, and a measuring electrode 22 or 28 located in the measuring gas chamber and cooperating with the reference electrode to form a concentration cell, wherein both gas chambers are arranged within a second solid electrolyte 4b adjacent to the first solid electrolyte. See figures 15 and 21; col. 21, line 14 to col. 22, line 6.

Friese discloses a measuring gas chamber 7, an internal pump electrode 8-8' in this chamber, an external pump electrode 6 separated from the internal pump electrode by a first solid electrolyte 1 and cooperating with the internal pump electrode to form a pump cell, a reference gas chamber 10, a reference electrode 11 in the reference gas chamber; and a measuring electrode 9 located in the measuring gas chamber and cooperating with the reference electrode to form a concentration cell. Since the measuring gas chamber 7 is at least partly in a second electrolyte 2, both gas chambers can be said to be arranged in the second electrolyte. See figure 1A; col. 3, lines 14-44.

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Applicant's claims differ from Kato or Friese by calling for a barrier layer that substantially prevents ionic conduction between at least one electrode of the pump cell and at least one electrode of the concentration cell.

Mase discloses a high electric-resistance barrier layer 12 for insulating components of a solid electrolyte sensor from each other. See col. 1, lines 41-45; col. 2, line 33 to col. 4, line 8.

Yamada discloses an insulating barrier layer 46, 89 separating the electrodes of one cell from the electrodes of another cell in a solid electrolyte sensor. See col. 11, lines 21-22; col. 14, line 23.

It would have been obvious for Kato or Friese to adopt a high resistance barrier layer for isolating sensor components (e.g. electrodes of different cells) from each other in view of Mase or Yamada. One of ordinary skill in the art would readily recognize the possibility of electrical interference among the sensor components without such a barrier layer.

As for claim 9, the provision of a second reference electrode is considered to be merely pluralizing. Note also that Friese shows pluralizing the internal pump electrode by providing electrodes 8 and 8'.

In the specification, page 3, last line, should "electrode layer" (1st occ) be --electrolyte layers--?

The examiner can be reached at 703-308-3329. His supervisor Nam Nguyen can be reached at 703-308-3322. Any general inquiry should be directed to the receptionist at 703-308-0661. A fax number for TC 1700 is 703-872-9310.

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A handwritten signature in black ink, appearing to be 'Ta Tung', written in a cursive style.

Ta Tung

Primary Examiner

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